

Fire Protection Competency 4.8

Competency 4.8 Fire protection personnel shall demonstrate a familiarity level knowledge of contract management and administration sufficient to appraise contractor organizations in the area of fire protection.

1. Supporting Knowledge and Skills

- a. Discuss the key elements of the contractual relationship between the Department of Energy and the contractor, and the process for preparing cost estimates and budgets.
- b. Describe the role of fire protection personnel with respect to the evaluation of contractor fire protection programs for the cost-plus award fee process.
- c. Describe the responsibilities of fire protection personnel associated with contractor compliance with the Price-Anderson Act.
- d. Using actual or hypothetical data from a fire protection program, discuss the program's budget, schedule, and impact on the fire protection activities.

2. Self-Study Activities (Corresponding to the Intent of the Above Competency)

Below are two web sites containing many of the references you may need.

Web Sites		
Organization	Site Location	Notes
Department of Energy	http://wastenot.inel.gov/cted/stdguido.html	DOE Standards, Guides, and Orders
U.S. House of Representatives	http://law.house.gov/cfr.htm	Searchable Code of Federal Regulations

Read DOE Order 5480.19, *Guidelines for the Conduct of Operations at DOE Facilities*, Attachment I, Chapter 1, Operations Organization and Administration.

EXERCISE 4.8-A Identify the key elements and features of an effective DOE and operating contractor relationship.

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Review DOE 5700.2D, *Cost Estimating, Analysis, and Standardization*.

EXERCISE 4.8-B DOE Order 5700.2D, *Cost Estimating, Analysis, and Standardization*, provides several different methods for preparing cost estimates. Referring to the Order, describe them.

Read Sections 901.603-71 of DEAR, CFR Title 48, Chapter 9.

EXERCISE 4.8-C Explain what fire protection personnel (other than contracting officer's representatives) are supposed to do regarding the evaluation of contractor occupational safety programs for the cost-plus-award fee process.

Read the information about the Price-Anderson Act presented in the *Summary* section of this study guide. This information was extracted from the *Federal Register* and Public Law 100-408, Price-Anderson Amendments Act.

Scan 10 CFR 830, *Nuclear Safety Management*.

EXERCISE 4.8-D Very broadly, what is the purpose of the Price-Anderson (Amendments) Act?

EXERCISE 4.8-E What are the implications of the Price-Anderson Act for 1) the DOE professional and 2) the contractor?

EXERCISE 4.8-F What is the impact of the Act upon the award-fee process?

Review DOE Order 4700.1, *Project Management System*. This Order will be phased out upon the incorporation of its contents into contracts or other agreements. It is presented here because its general content remains applicable.

Scan DOE O 430.1, *Life-Cycle Asset Management*, Section 6, Requirements.

EXERCISE 4.8-G Prepare a plan, budget, and schedule encompassing all the DOE standard activities for the following hypothetical project.

- In so doing, complete the second column of the attached checklist with your supervisor to determine what tasks you will need to describe and document.
- As you complete the tasks, fill out the column, "Complete (Y/N) & Comments."
- Present your entire project package to your supervisor or site subject matter expert for evaluation.

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Project: As the assigned project manager for a subactivity of the following strategic system (i.e., Build or Convert Facilities and Equipment to Reprocess Specific High-Level Radioactive Waste for Bio-Medical Application); design, procure, install, check out, operate, and maintain an uninterruptible power supply (UPS).

UPS PROJECT - COMPLETION CHECKLIST (Example)			
DOE Standard Project Activities	UPS Project Tasks	Complete (Y/N) & Comments	Supervisor OK
Plan			
System design			
Work scope			
WBS			
Resources			
Budget			
Schedule			
Acquisition-Procurement			
Approval			
Bid spec.			
Bid			
Review bids			
Accept			
Purchase			
Receipt			
Installation, checkout, & acceptance testing			

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UPS PROJECT - COMPLETION CHECKLIST (Example)			
DOE Standard Project Activities	UPS Project Tasks	Complete (Y/N) & Comments	Supervisor OK
Preparation-revision of ops. and maint. procedures, and drawings			
Preparation of trng. materials			
Staff training			
Execution			
Operation, maintenance, & surveillance			
Update of design docs.			
Control			
Configuration management			
QA			
Project mgt.			
Reporting			

3. Summary

Effective relationships between the Department and operating contractors are based in the site's conduct of operations. The organization and administration of operations should ensure that a high level of performance in DOE facility operations is achieved through effective implementation and control of operations activities. Effective implementation and control of operating activities are primarily achieved by establishing written standards in operations, periodically monitoring and assessing performance, and holding personnel accountable for their performance.

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DOE personnel may be asked to participate in the contractor evaluation assessments or reviews or to supply input to those actually performing the review. The items that need to be reviewed from the fire protection perspective are:

- Competitive sources are/were solicited, evaluated, and selected.
- Standards are prescribed and met.
- Performance or delivery is timely.
- Estimated costs, and fees are reasonable.
- Files are documented to substantiate the judgements, decisions, and actions taken.

DOE Order 5700.2D, *Cost Estimating, Analysis, and Standardization*, defines cost estimate as:

“ . . . a statement of costs estimated to be incurred in the conduct of an activity such as a program, or the acquisition of a project or system.” Budget is usually defined as a financial plan used to estimate the results of future operations.

Passage of the Price-Anderson Act in 1957, which amended the Atomic Energy Act of 1954, was intended primarily to assist the fledgling commercial nuclear industry, which was otherwise unable to insure itself due to its hazardous nature. Congress included government contractors under legislation’s coverage to provide the public with full protection for nuclear incidents, whether they occurred at government-owned facilities or at commercial nuclear power plants. Although Congress made indemnification of M&O contractors optional in the original Price-Anderson Act, the Atomic Energy Commission (AEC) routinely protected its contractors against all liability resulting from nuclear incidents. Additionally, by extending the role of government insurer into the nonnuclear area, the AEC provided contractual protection for all other activities at government-owned facilities.

The Price-Anderson Amendments Act of 1988 added Section 234A to the Atomic Energy Act to provide DOE with authority to assess civil penalties for violations of rules, regulations, or orders relating to nuclear safety by contractors and subcontractors who are indemnified by the Department, pursuant to Section 170 of the Atomic Energy Act. Any risks that are indemnified by the Government will not be considered as risk to the contractor. The net result of this Act is to provide for greater accountability of contractors, subcontractors, and suppliers in the performance of their duties under contract with DOE for the indemnified nuclear activities. The availability and careful exercise of this authority by DOE management and facility representatives can reduce the likelihood of serious nuclear incidents. For the contractor, there are opportunities as well to identify improvements to existing operations, facilities, and modifications in practices that can improve the health and safety of staff, the public, and the environment. To this end, the DOE professional:

- a. Oversees and provides direction to the contractor for the preparation of implementation plans in response to the new rules
- b. Monitors the contractor’s adherence to the rules

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- c. Brings potential non-compliances to supervisor or PAAA Coordinator
- d. Assists DOE HQ in determining contractor's liability and penalty (civil and/or criminal) for a violation

The contractor:

- a. Is required to prepare implementation plans for the new rules
- b. Is civilly and criminally liable for failing to adhere to the rules
- c. Is directly affected by its performance

Project management is a management approach in which authority and responsibility for execution are vested in a single individual. This approach provides focus on the planning, organization, direction, and control of all activities within the project. The project management plan is the document that sets forth the plans, organization, and systems that those responsible for managing the project shall utilize.

4. Exercise Solutions

EXERCISE 4.8-A Identify the key elements and features of an effective DOE and operating contractor relationship.

ANSWER 4.8-A An effective DOE and operating contractor relationship includes the following features:

- High operating standards established by management
- Communication of operating standards to the working level
- Sufficient resources provided to the operations department
- Ensurance that personnel are well trained
- Close monitoring of performance in operations
- Accountability of workers and their supervisors for their performance in conducting activities

EXERCISE 4.8-B DOE Order 5700.2D, *Cost Estimating, Analysis, and Standardization*, provides several different methods for preparing cost estimates. Referring to the Order, describe them.

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ANSWER 4.8-B

Cost Estimate Technique	Description
Bottoms-Up	“Generally, work statement and set of drawings or specifications are used to ‘takeoff’ material quantities required . . . in accomplishing a given operation or producing an equipment component. From these quantities, direct labor, equipment, and overhead costs are derived and added thereto.” (DOE Order 5700.2D, Attachment 1,1)
Specific Analogy	These use the known cost of an item used in a prior system to estimate the cost of a similar item in the new system. Adjustments are then made to account for recognized differences in the two systems (i.e., design, complexity of performance, etc.).
Parametric	This requires historical databases on similar systems and uses statistical analysis to find correlations between the cost drivers and other system parameters.
Cost Review and Update	Previous estimates of the same project are examined for internal logic, completeness of scope, etc.
Trend Analysis	Actual costs of work performed is compared to the original projected costs and a contractor efficiency index is derived. The index is then used to predict the cost of work not yet completed.
Expert Opinion	Specialists are consulted reiteratively until a consensus cost estimate is established. This is used in the absence of other data or techniques.

EXERCISE 4.8-C Explain what fire protection personnel (other than contracting officer’s representatives) are supposed to do regarding the evaluation of contractor occupational safety programs for the cost-plus-award fee process.

ANSWER 4.8-C Personnel who use the contracting process to accomplish their programs must support the contracting officer in ensuring that:

- Competitive sources are solicited, evaluated, and selected.
- Quality standards are prescribed and met.
- Performance or delivery is timely.

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- Prices, estimated costs, and fees are reasonable.
- Files are documented to substantiate the judgements, decisions, and actions taken.

EXERCISE 4.8-D Very broadly, what is the purpose of the Price-Anderson (Amendments) Act?

ANSWER 4.8-D To amend the Price-Anderson provisions of the Atomic Energy Act of 1954 to extend and improve the procedures for liability and indemnification for nuclear incidents, as well as contractor accountability.

EXERCISE 4.8-E What are the implications of the Price-Anderson Act for 1) the DOE professional and 2) the contractor?

ANSWER 4.8-E

1. a. Oversees and provides direction to the contractor for the preparation of implementation plans in response to the new rules
b. Monitors the contractor's adherence to the rules
c. Brings potential non-compliances to supervisor or PAAA Coordinator
d. Assists DOE HQ in determining contractor's liability and penalty (civil and/or criminal) for a violation
2. a. Contractors are required to prepare implementation plans for the new rules.
b. Contractors are civilly and criminally liable for failing to adhere to the rules.

EXERCISE 4.8-F What is the impact of the Act upon the award-fee process?

ANSWER 4.8-F Noncompliance and violations will likely be factored into the evaluation of contractor performance.

EXERCISE 4.8-G Prepare a plan, budget, and schedule encompassing all the DOE standard activities for the following hypothetical project.

- In so doing, complete the second column of the attached checklist with your supervisor to determine what tasks you will need to describe and document.

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- As you complete the tasks, fill out the column, “Complete (Y/N) & Comments.”
- Present your entire project package to your supervisor or site subject matter expert for evaluation.

ANSWER 4.8-G Solutions are dependent upon the initial data used. Review your completed checklist with your supervisor or site subject matter expert.